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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,887	01/13/2004	Jeffrey W. Long	NC 84,925	3597

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NAVAL RESEARCH LABORATORY
ASSOCIATE COUNSEL (PATENTS)
CODE 1008.2
4555 OVERLOOK AVENUE, S.W.
WASHINGTON, DC 20375-5320

EXAMINER	
MILLER, DANIEL H	

ART UNIT	PAPER NUMBER
1775	

DATE MAILED: 12/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/756,887	LONG ET AL.	
	Examiner	Art Unit	
	Daniel Miller	1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/5/2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,10-17,19-27,29-38,40 and 41* is/are pending in the application.

4a) Of the above claim(s) *21-27,29-38,40 and 41* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,10-17 and 19-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of the article claims in the reply filed on 10/10/2006 is acknowledged.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 4-6 and 10-11, and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Bluvshtein et al (U.S. 2002/0089807).

3. Bluvshtein teaches a capacitor comprising an anode and a cathode (figure 1 and abstract), where the anode and cathode both comprise a carbon substrate with a high porosity [0017]. The carbon substrate is infiltrated with an analine monomer and then an electrical current is used to create a polymerization of the aniline, which coats the carbon substrate [0020, 0028]. Since the coating of Bluvshtein is created in substantially the same way as applicant's claimed method it is assumed the open pores of the carbon-based substrate would be retained as in applicant's composite. The structure further has an electrolyte [0017] and a current collector in contact with the cathode and anode (electrodes) [0030].

4. Regarding claims 2 and 11, the carbon substrate can be an aerogel (see example 1). Regarding claims 4 and 13, the average pore size can exemplarily be less than 100 nm in diameter [0035]. Regarding claims 5 and 14, the polymer coating is conductive otherwise the electrochemical polymerization process would not function [0028]. The method of production is substantially similar to that of applicants and is therefore inherently self limiting. Although even if the method was not found to be self-limiting electropolymerization the method of production is not indicative of patentability of the product where the final product is taught. Therefore claim 18 is anticipated.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 3, 8, 12, 17, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bluvshtein.

7. Bluvshtein, discussed above, is silent as to the carbon composite being formed from carbon nanofoam and templated mesoporous carbon, the thickness of the polymer coating, or the electrolyte being sulfuric acid (an aqueous liquid).

8. However, Bluvshtein does teach that the carbon substrate is highly porous and can comprise foam [0017] and other carbon substrates. It further teaches an exemplary embodiment with nanometer-sized pores (example 1). Therefore, it would be obvious to

one of ordinary skill in the art at the time of the invention to use a carbon nanofoam and a porous carbon such as templated mesoporous carbon because they are porous and have pore size and composition (foam) within the teachings and spirit of the invention.

9. Although the reference is silent as to the thickness of the coating it would be obvious to one of ordinary skill in the art at the time of the invention to optimize the coating in order to obtain the highest specific capacitance and higher energy density than prior capacitors (abstract).

10. Regarding claims 19 and 20, although the reference does not teach an aqueous liquid phase electrolyte (instead using a solid or gel electrolyte) it is well known in the art to use sulfuric acid (a liquid aqueous solution) with electrodes similar to the ones taught by bluvshtein. For instance, most car batteries use a liquid form (aqueous solution) sulfuric acid electrolyte. It would be obvious to one of ordinary skill in the art at the time of the invention to use a sulfuric acid electrolyte in aqueous form.

11. Claims 7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bluvshtein in view of Shi (US 6,383,640).

12. Bluvshtein, discussed above, teaches a polymerized coating but is silent as to the specific polymers listed in claim 7 and 16.

13. Shi teaches polythiophenes attached directly to an electrode (abstract and figure 1) used for a capacitor. The modified conductive polymer of Shi significantly improves cycle life (column 3 line 60-68).

14. It would be obvious to one of ordinary skill in the art at the time of the invention to substitute the polymer of Bluvshtein with the polymer of Shi because the conductive polymer of Shi significantly improves cycle life

Response to Arguments

15. Applicant's arguments filed 10/5/2006 have been fully considered but they are not persuasive. The arguments are not commensurate in scope with the claim language. The art of record also uses electropolymerization. There is nothing in the claim that refers to a specific thickness or a specific pH. These appear to be critical features to the invention.

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Miller whose telephone number is (571)272-1534. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571)272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Daniel Miller

JENNIFER MCNEIL
SUPERVISORY PATENT EXAMINER
11/30/06